

<b>STN</b>	<b>Skúšanie zatvrdnutého betónu</b> <b>Časť 12: Stanovenie odolnosti betónu proti</b> <b>karbonatizácii</b> <b>Zrýchlená metóda karbonatizácie</b>	<b>STN</b> <b>EN 12390-12</b>  73 1302
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Testing hardened concrete - Part 12: Determination of the carbonation resistance of concrete - Accelerated carbonation method

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

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English Version

## Testing hardened concrete - Part 12: Determination of the carbonation resistance of concrete - Accelerated carbonation method

Essais pour béton durci - Partie 12 : Détermination de la résistance à la carbonatation du béton - Méthode de la carbonatation accélérée

Prüfung von Festbeton - Teil 12: Bestimmung des Karbonatisierungswiderstandes von Beton - Beschleunigtes Karbonatisierungsverfahren

This European Standard was approved by CEN on 4 November 2019.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN 12390-12:2020) has been prepared by Technical Committee CEN/TC 104 “Concrete and related products”, the secretariat of which is held by SN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2020, and conflicting national standards shall be withdrawn at the latest by July 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

The series EN 12390, *Testing hardened concrete*, includes the following parts:

- *Part 1: Shape, dimensions and other requirements for specimens and moulds*
- *Part 2: Making and curing specimens for strength tests*
- *Part 3: Compressive strength of test specimens*
- *Part 4: Compressive strength – Specification for testing machines*
- *Part 5: Flexural strength of test specimens*
- *Part 6: Tensile splitting strength of test specimens*
- *Part 7: Density of hardened concrete*
- *Part 8: Depth of penetration of water under pressure*
- *Part 9: Freeze–thaw resistance with de-icing salts - Scaling (Technical Specification)*
- *Part 10: Determination of the carbonation resistance of concrete at atmospheric levels of carbon dioxide*
- *Part 11: Determination of the chloride resistance of concrete, unidirectional diffusion*
- *Part 13: Determination of the secant modulus of elasticity in compression*
- *Part 14: Semi-adiabatic method for the determination of heat released by concrete during its hardening process*
- *Part 15: Adiabatic method for the determination of heat released by concrete during its hardening process*
- *Part 16: Determination of the shrinkage of concrete*
- *Part 17: Determination of creep of concrete in compression*
- *Part 18: Determination of the chloride migration coefficient (in preparation)*

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- *Part uu: Determination of resistivity*<sup>1</sup>
- *Part zz: Determination of the carbonation rate of concrete under test conditions that accelerate carbonation*<sup>1</sup>.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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<sup>1</sup> Under development.

## **Introduction**

Reinforced concrete structures need to be durable to ensure that the intended working life is achieved. The resistance to corrosion of reinforcement induced by carbonation plays a significant role in a structure's serviceability and consequently carbonation behaviour of concrete is an important property to measure. This document specifies an accelerated test method that could be applied to cast test specimens to assess the carbonation behaviour of a concrete mix.

**EN 12390-12:2020 (E)****1 Scope**

This document quantifies the carbonation resistance of concrete using test conditions that accelerate the rate of carbonation. After a period of preconditioning, the test is carried out under controlled exposure conditions using an increased level of carbon dioxide.

NOTE The test performed under reference conditions takes a minimum of 112 days comprising a minimum age of the specimen prior to curing under water of 28 days, a minimum preconditioning period of 14 days and an exposure period to increased carbon dioxide levels of 70 days.

This procedure is not a method for the determination of carbonation depths in existing concrete structures.

**2 Normative references**

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12350-2, *Testing fresh concrete — Part 2: Slump test*

EN 12350-3, *Testing fresh concrete — Part 3: Vebe test*

EN 12350-4, *Testing fresh concrete — Part 4: Degree of compactability*

EN 12350-5, *Testing fresh concrete — Part 5: Flow table test*

EN 12390-2, *Testing hardened concrete — Part 2: Making and curing specimens for strength tests*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**